TD00030662C2

Service Manual

Mini Cassette

DOLBY B NR

RQ-SX91

Stereo Radio Cassette Player AR10 Mechanism Series

Colour

(S).....Silver Type

(A).....Blue Type

Area

(EG).....Europe

(EB).....Great Britain.

SPECIFICATIONS

Specifications

GENERAL

Power Requirement:

Battery;	DC 1.5V (one R6/LR6, "AA",UM-3 battery)
Rechargeable Battery;	DC 1.2V with an included Panasonic Rechargeable Battery (RP-BP61SYD) x 1
Power output:	2.5mW+2.5mW (RMS...max)
Output jack:	Headphone;80Ω, ∅3.5
Dimensions(WxHxD):	108.8 x 75.0 x17.8 mm
Weight:	168g (With rechargeable battery)

Charger:

input;

For (EG) area;	AC220~230V, 50Hz,4 W
For (EB) area;	AC230~240V, 50Hz,4 W

Output;

For (EG) area;	DC 1.2V,175 mA
For (EB) area;	DC 1.2V,350 mA

Notes:

1.Weights and dimensions shown are approximate.

2.Design and specifications are subject to change without notice.

*1 Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol ◻◻ are trademarks of Dolby Laboratories Licensing Corporation.

CASSETTE PLAYER

Track system:	4 track, 2 channel,stereo
Frequency Range (Normal/High/Metal):	40 ~ 18,000Hz (- 6 dB)
Recharging time:	About 4 hours
Motor:	Electrical governor motor
Tape Speed:	4.8 cm/s

Playing time:

(When used in hold mode, at 25°C and on flat stable surface,)

Battery (-ies)	Tape playback
Rechargeable battery *2	About 19 hours
Panasonic alkaline battery	About 67 hours
Rechargeable battery *2 and Panasonic alkaline battery	About 90 hours

*2 When the included rechargeable battery is fully recharged (4 hours required)

- The play time may be less depending on the operating conditions.

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⚠ WARNING

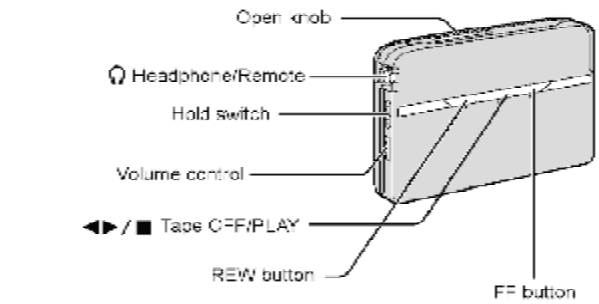
This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

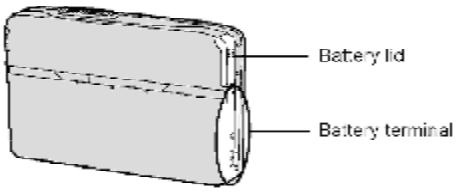
Panasonic®

1. Location of Controls

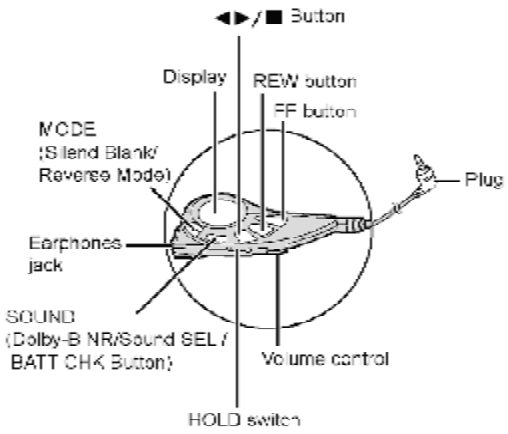
■ Location of Controls

Main Unit





Remote Controller



Stereo earphones

2. Service Mode

Service Mode

The RQ-SX71 has a Service Mode designed to help identify Faulty parts in the event of an error.
This mode is especially useful when servicing carried out.

Items Required

1.Stereo earphones.
2.Remote controller.
3.Rechargeable battery or dry cell (R6/LR6,AA,UM-3) housed in case.

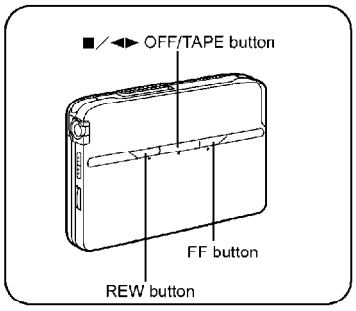
Service Mode Functions

1.Unit and stereo earphones test
This check for problems existing in the unit or stereo earphones.
2.Remote controller test
After the unit and stereo earphones have passed test 1. above,this test is used to check if the remote controller is functioning normally.
3.Amplifier test
This test should be run if an amplifier failure occurred during test 1. above.

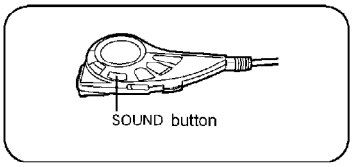
Unit and Stereo Earphones Test

Preparations

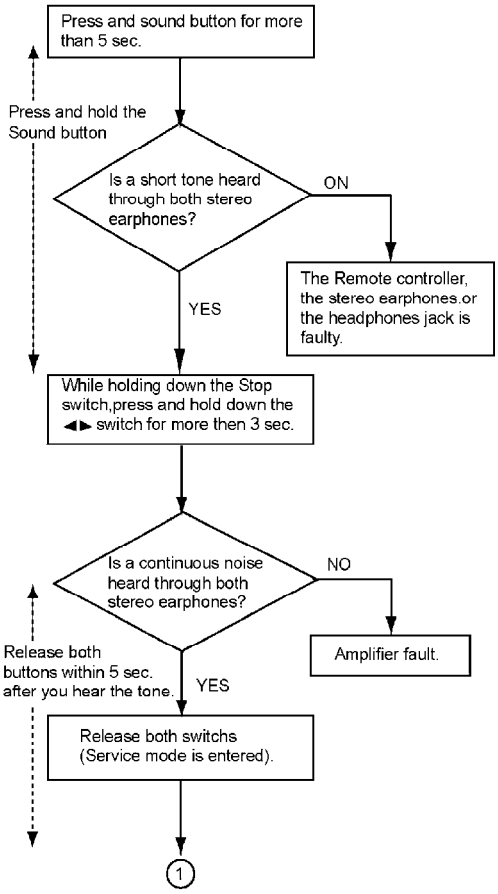
1.Plug the stereo earphones into headphone jack.
2.Insert a fully-charged rechargeable battery or dry cell (R6/LR6, AA, UM-3) (housed in battery case).
3.Insert a cassette tape.
4.Release the hold mode.



Remote controller operation switchs location



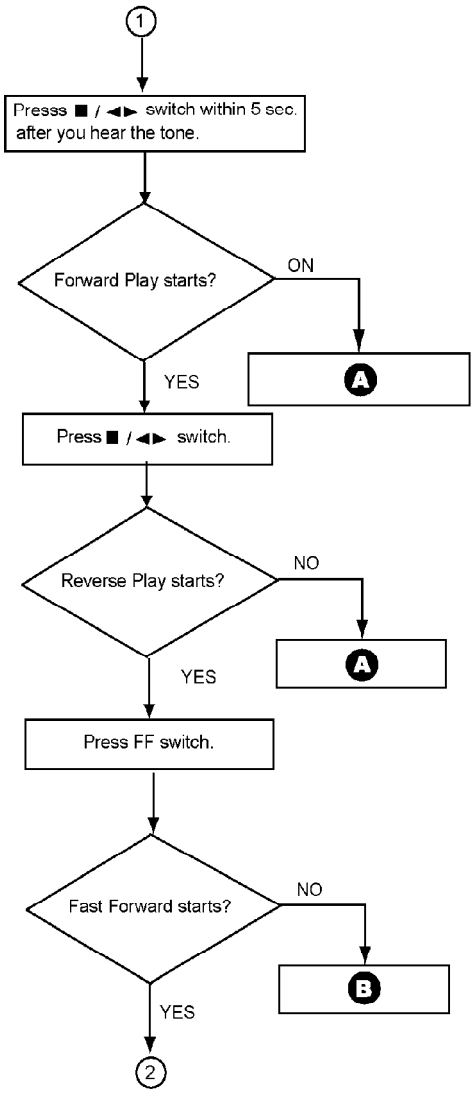
Operation switches for Service Mode

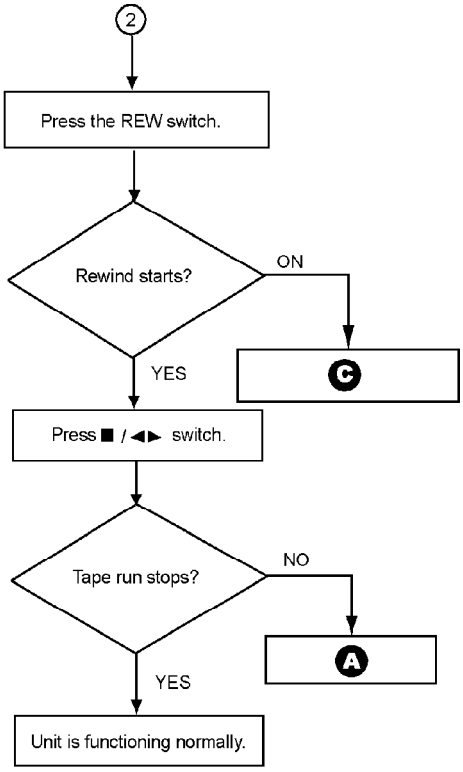

Press and sound button for more than 5 sec.
Press and hold the Sound button
Is a short tone heard through both stereo earphones?
ON
The Remote controller, the stereo earphones.or the headphones jack is faulty.
YES
While holding down the Stop switch,press and hold down the ◄► switch for more then 3 sec.
Is a continuous noise heard through both stereo earphones?
NO
Amplifier fault.
Release both buttons within 5 sec. after you hear the tone.
YES
Release both switchs (Service mode is entered).
1

2.1. Service Mode

Preparations

1. **Plug the stereo earphones into headphone jack.**
2. **Insert a fully-charged rechargeable battery or dry cell (R6/LR6, AA, UM-3) (housed in battery case).**
3. **Insert a cassette tape.**
4. **Release the hold mode.**





Note: The unit exits Service mode when the Play/Direction, Stop switch is pressed.

● Troubleshooting

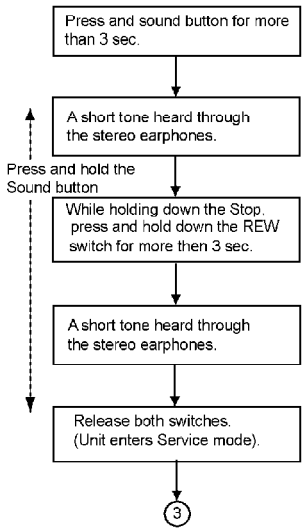
Stap	Symptom	Fault Location
A	Playback, reverse or stop fails if Play/direction,Stop switch is pressed.	S505 or motor may be faulty.
B	Fast Forward fails to start if FF switch is pressed.	S507 may be defective.
C	Rewind fails to start if REW switch is pressed.	S506 may be defective.

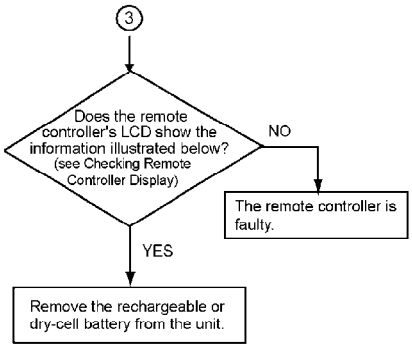
2.2. Remote Controller Test

Remote Controller Test

Preparations

1. Plug the stereo earphones into headphone jack.
2. Insert a fully-charged rechargeable battery or dry cell (R6/LR6, AA, UM-3) (housed in battery case).
3. Insert a cassette tape.
4. Release the hold mode.


Press and sound button for more than 3 sec.
A short tone heard through the stereo earphones.
Press and hold the Sound button
While holding down the Stop, press and hold down the REW switch for more then 3 sec.
A short tone heard through the stereo earphones.
Release both switches. (Unit enters Service mode).
3


3
Does the remote controller's LCD show the information illustrated below? (see Checking Remote Controller Display)
NO
The remote controller is faulty.
YES
Remove the rechargeable or dry-cell battery from the unit.

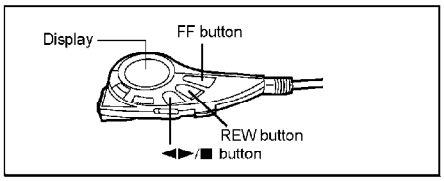
Note: The unit exits Service Mode when the battery is removed.

● Checking remote controller Display

Note*: The remote controller display will be turned off if no button is pressed for 2 sec.

Remote controller operations	Enter Service Mode. → Press ◄►/■ button. (In 2 sec.) → Press the FF button. (In 2 sec.) → Press the REW button. (In 2 sec.)			
Remote controller display information	Display glows in bule while letters "PLAY" scroll from right to left.	Display glows in "FF".	Display glows in "REW".	Display glows in bule while letters "PLAY" scroll from right to left.

● Remote controller Features

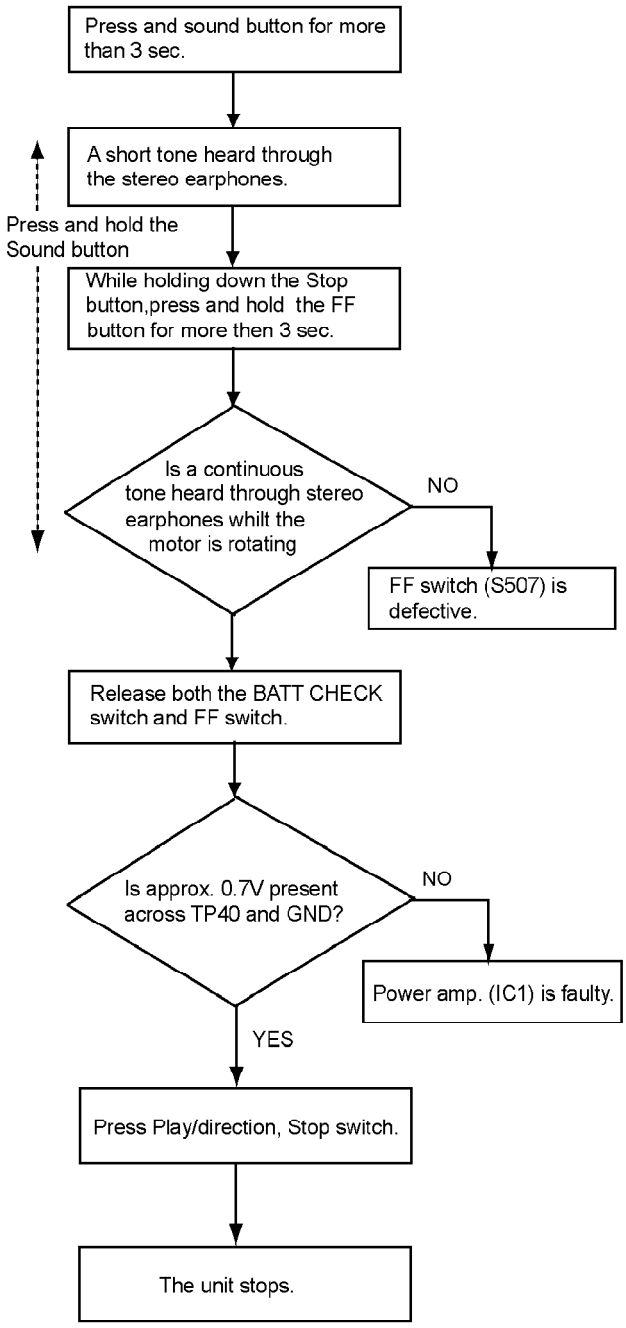


● The remote controller is functioning normally if the display appears as illustrated above.

2.2.1. Amplifier Test

Amplifier Test

This test is required if the amplifier is found to be malfunctioning through ,Unit and Stereo Earphone Test.
Preparations: See Unit and Stereo Earphone Test.


Press and sound button for more than 3 sec.
A short tone heard through the stereo earphones.
Press and hold the Sound button
While holding down the Stop button,press and hold the FF button for more then 3 sec.
Is a continuous tone heard through stereo earphones whilt the motor is rotating
NO
FF switch (S507) is defective.
Release both the BATT CHECK switch and FF switch.
Is approx. 0.7V present across TP40 and GND?
NO
Power amp. (IC1) is faulty.
YES
Press Play/direction, Stop switch.
The unit stops.

Note: The unit exits Service Mode when the Play/direction, Stop switch is pressed.

3. Mechanism Block Replacement Procedure

3.1.

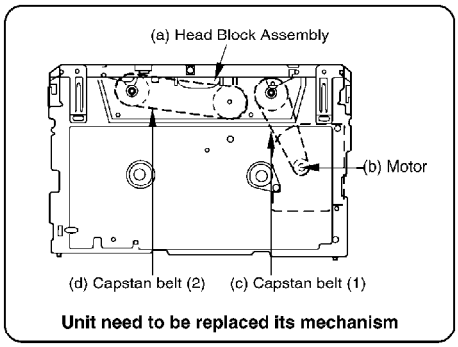
Replacing the Tape Transsport Assembly

The tape transport mechanism is supplied semi-assembled.

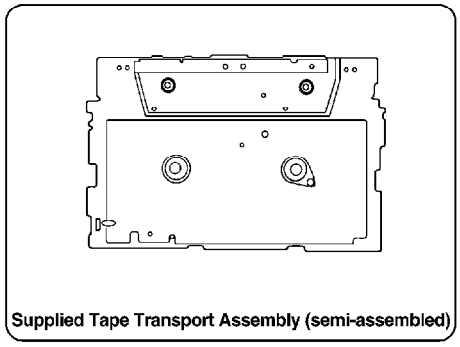
Configuration:

Tape transport mechanism excluding the head block assembly,capstan motor and capstan belts (1) and (2).

When replacing the Tape Transport Assembly,first remove the (a) head block assembly, (b) motor and (c) capstan belts (1) and (d) (2) from the assembly to be replaced, then install these parts <(a)-(d)> onto the replacement assembly supplied. (for details of the dismantling procedure, see Operation Checks and Component Replacement Procedures.



Unit need to be replaced its mechanism



Supplied Tape Transport Assembly (semi-assembled)

Note: After replacing, perform tape adjustment.

Replacing the head block assembly

The head block assembly is supplied semi-assembled.

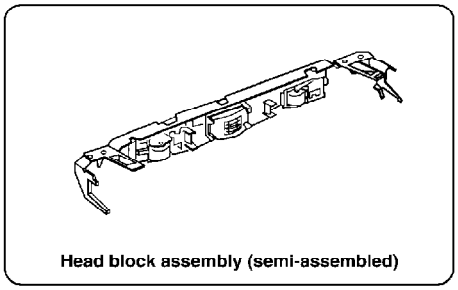
Configuration:

Head block assembly with head arm spring and pinch roller arm assembly (F) and (R).

The head arm spring and pinch roller arm assembly (F) and (R) will also be supplied separately from the head block assembly.

Note:

The head block assembly requires no azimuth adjustment.



Head block assembly (semi-assembled)

4. Operation Checks and Component Replacement / Procedures

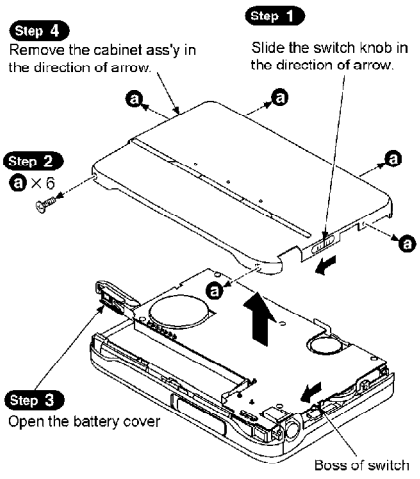
Note: 1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures Special ressembly procedures are described only when required.
3. Select item from the following index when checks or replacement are required.

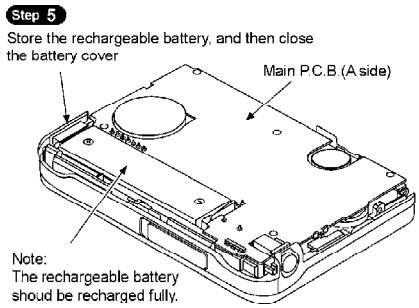
Contents

1. Checking for the main P.C.B..
2. Replacement for the motor and capstan belt.
3. Replacement for the intermedeate ornament (A).
4. Replacement for the head block ass'y.

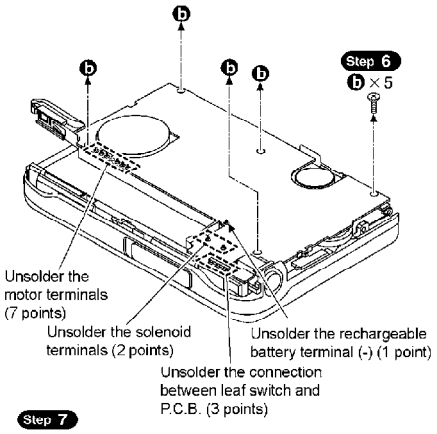
1. Checking for the main P.C.B.

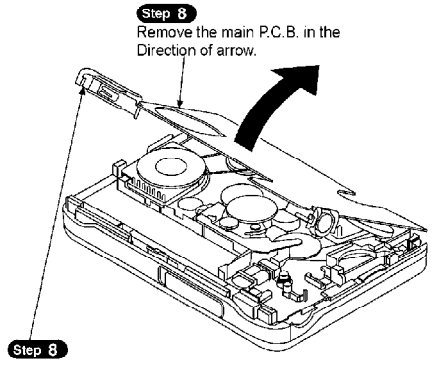
[Checking for the main P.C.B.(A side)]


Step 4
Remove the cabinet ass'y in the direction of arrow.
Step 1
Slide the switch knob in the direction of arrow.
Step 2
a × 6
Step 3
Open the battery cover
Boss of switch

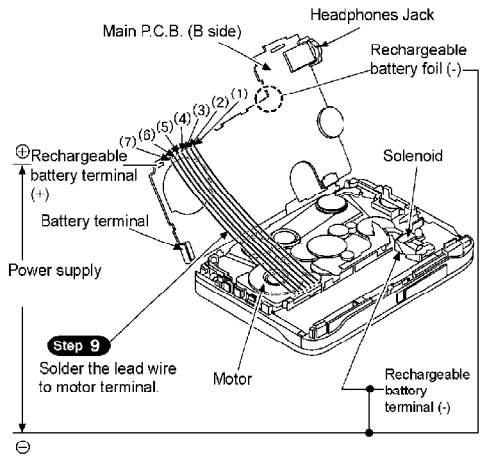

Step 5
Store the rechargeable battery, and then close the battery cover
Main P.C.B.(A side)
Note:
The rechargeable battery shoud be recharged fully.

[Removal for checking the main P.C.B. (B side)]


Step 6
b × 5
Unsolder the motor terminals (7 points)
Unsolder the solenoid terminals (2 points)
Unsolder the rechargeable battery terminal (-) (1 point)
Unsolder the connection between leaf switch and P.C.B. (3 points)
Step 7



•Check the main P.C.B. (B side) as show below.



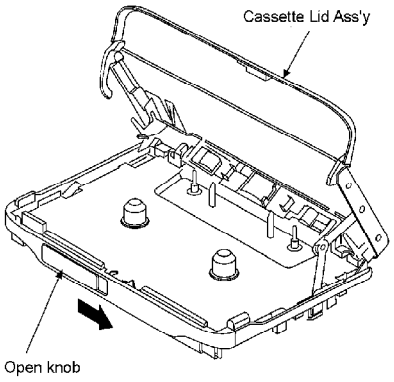
■ Operation Checks

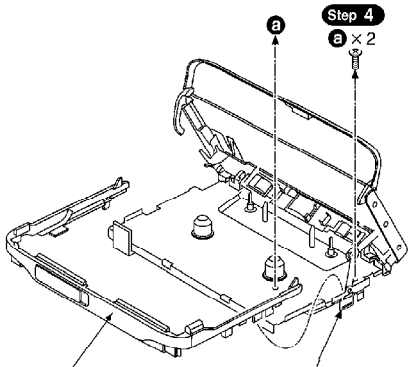
Confirm that the beeper sounds once by headphones when depressing the BATT CHECK button more than 3 sec. under above condition, and then depress the BATT CHECK button and FF button at same time more than 3 sec., so the FF mode will be operated.
Depress the PLAY/DIRECTION/STOP (◀▶/■) Button,and then that operation will be stopped.

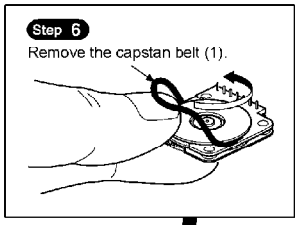
2. Replacement for the motor and capstan belt

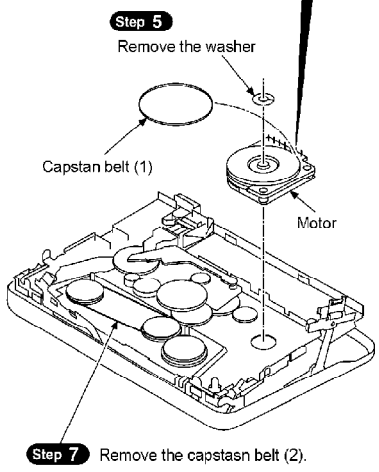
Follow the Step 1 ~ Step 4 , Step 6 ~ Step 8 of the item 1.

Step 1
Push the open knob, and then open the cassette lid ass'y.



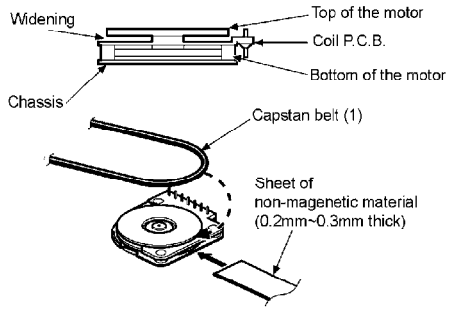


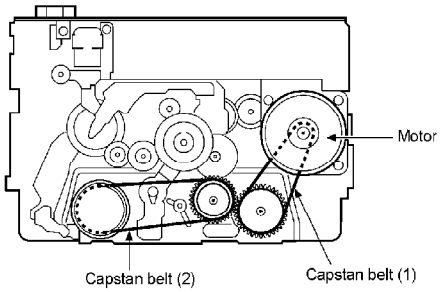




Installing the capstan belt (1)

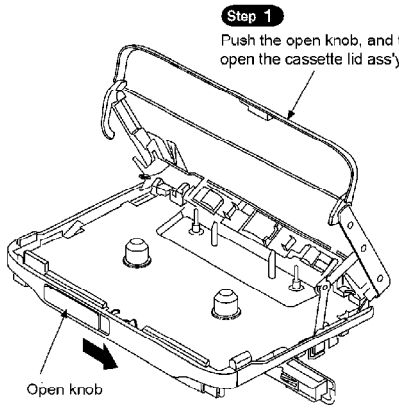
- When install the capstan belt (1) to motor, push up the motor by insert the non-magnetic material sheet between bottom of the motor and the chassis, and install the capstan belt (1) between top of the motor and the coil P.C.B..

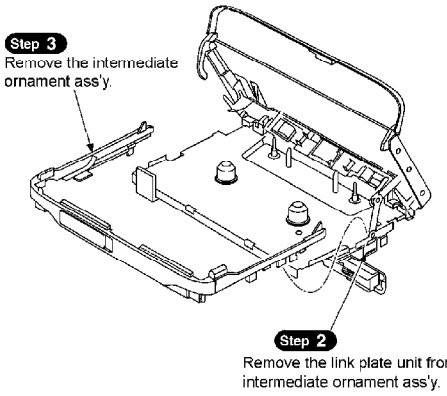


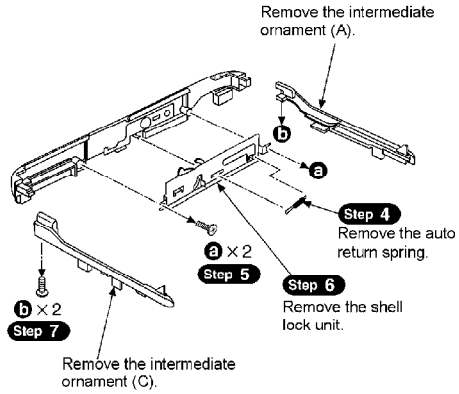


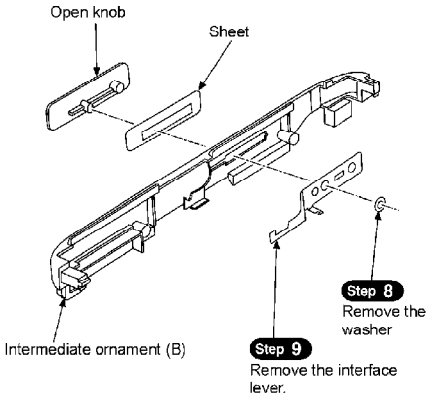
3. Replacement for the intermediate ornament (A), intermediate ornament (B), intermediate ornament (C) and open knob ass'y

- Follow Step 1 ~ Step 4 in item 1 on page 9.

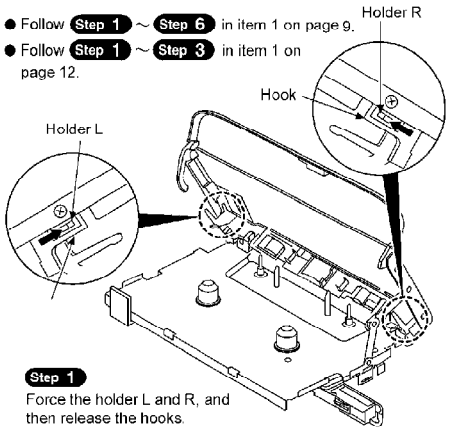




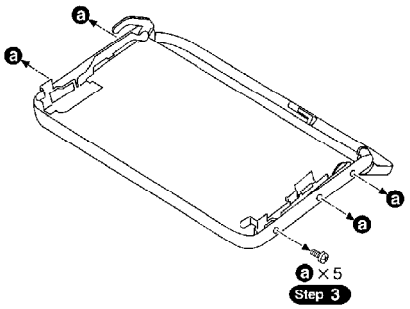




● Follow Step 1 ~ Step 6 in item 1 on page 9.
● Follow Step 1 ~ Step 3 in item 1 on page 12.

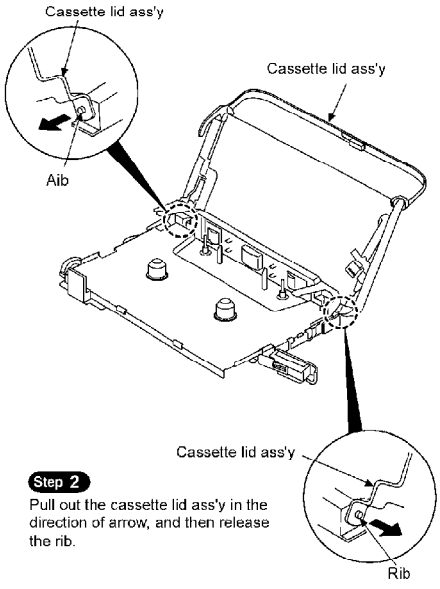


Step 1
Force the holder L and R, and then release the hooks.

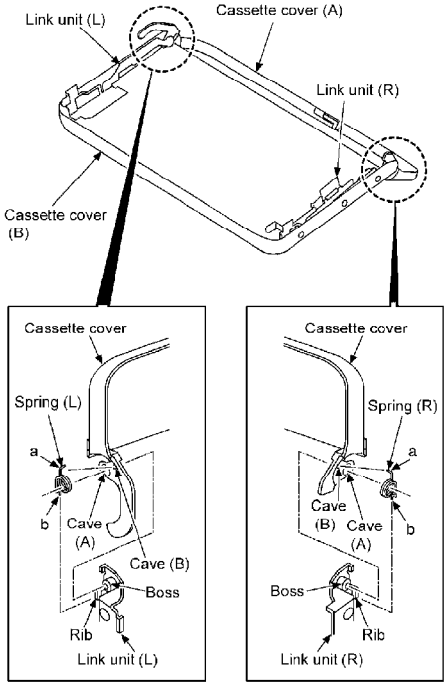


Step 3

Step 4
Remove the cassette cover (A) and cassette cover (B), and link unit (L).(R). and spring (L).(R).

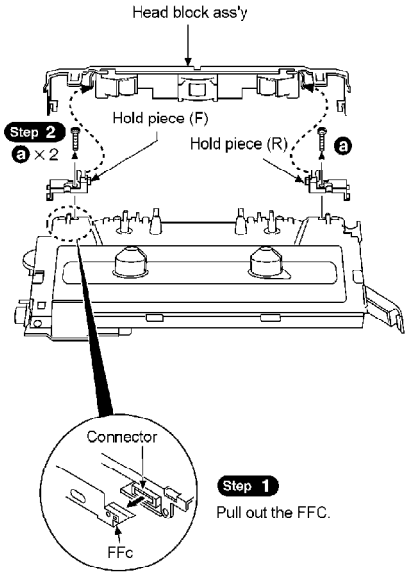


Step 2
Pull out the cassette lid ass'y in the direction of arrow, and then release the rib.

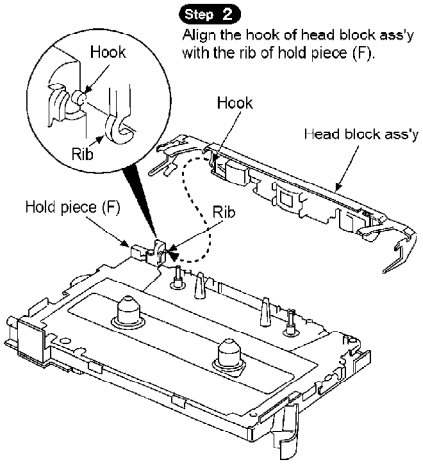


■ Replacing the head block ass'y

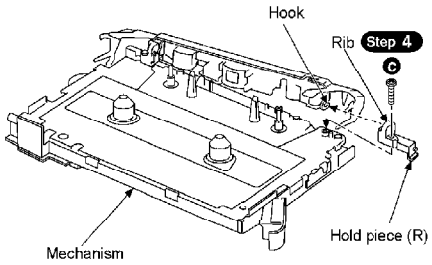
- Follow Step 1 ~ Step 6 in item 1 on page 9.
- Follow Step 1 ~ Step 3 in item 1 on page 11.
- Follow Step 1 ~ Step 2 in item 1 on page 12.



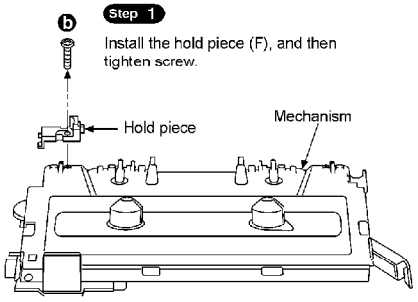
Step 1
Pull out the FFC.



Step 3
Align the hook of head block ass'y with the rib of hold piece (R), and then install the hold piece (R) to the mechanism.

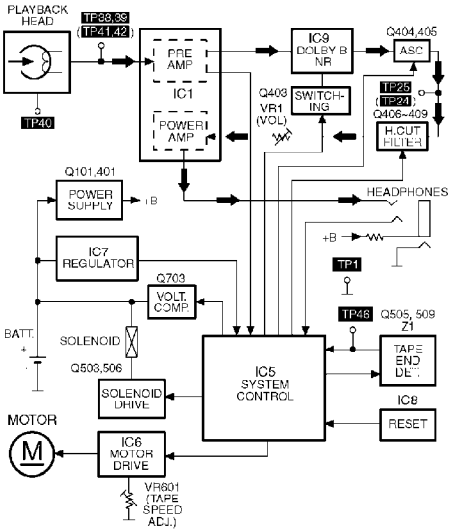


Assembly procedures for head block ass'y after replacement



5. Check Point of Signal

■ Block Diagram



Notes
- ( ) : Indicates pin No. Right channel.
- ➡ : Playback signal line.

5 Check Point of Signal

CHECK ITEM		TEST POINT
HEAD	FWD Lch	TP39
	FWD Rch	TP42
	REV Lch	TP38
	REV Rch	TP41
	VREF	TP40
DOLBY OUT ↓ VOLUME VR	Lch	TP25
	Rch	TP24
	GND	TP1
POWER AMP	Lch	HEADPHONES JACK
	Rch	HEADPHONES JACK
	GND	HEADPHONES JACK
TAPE END PULSE	FWD	TP46
	GND	TP1

■ Schematic Diagram

Notes:

- S11-1: Casssette half detect switch. (IN...ON, OUT...OFF)
- S11-2: Tape select switch . (NORMAL...ON, METAL/CrO_2...OFF)
- S500 : FWD/REV/STOP detect switch in "FWD" position.
- S502 : HOLD switch in "OFF" position.
- S505 : Stop,Playback/direction switch. (■ /◀▶)
- S506 : REW switch. (REW)
- S507 : FF switch. (FF)
- VR1 : Volume control VR. (VOLUME)
- VR601: Taspe speed adjustment VR.

- DC voltage measurements are taken with electronics voltmeter from negative terminal of battery. No mark... Fast Forward (FF) mode.

- Current consumption of tape playback (FWD)
  Volume VR MAX.....47 mA
  MIN.....33 mA

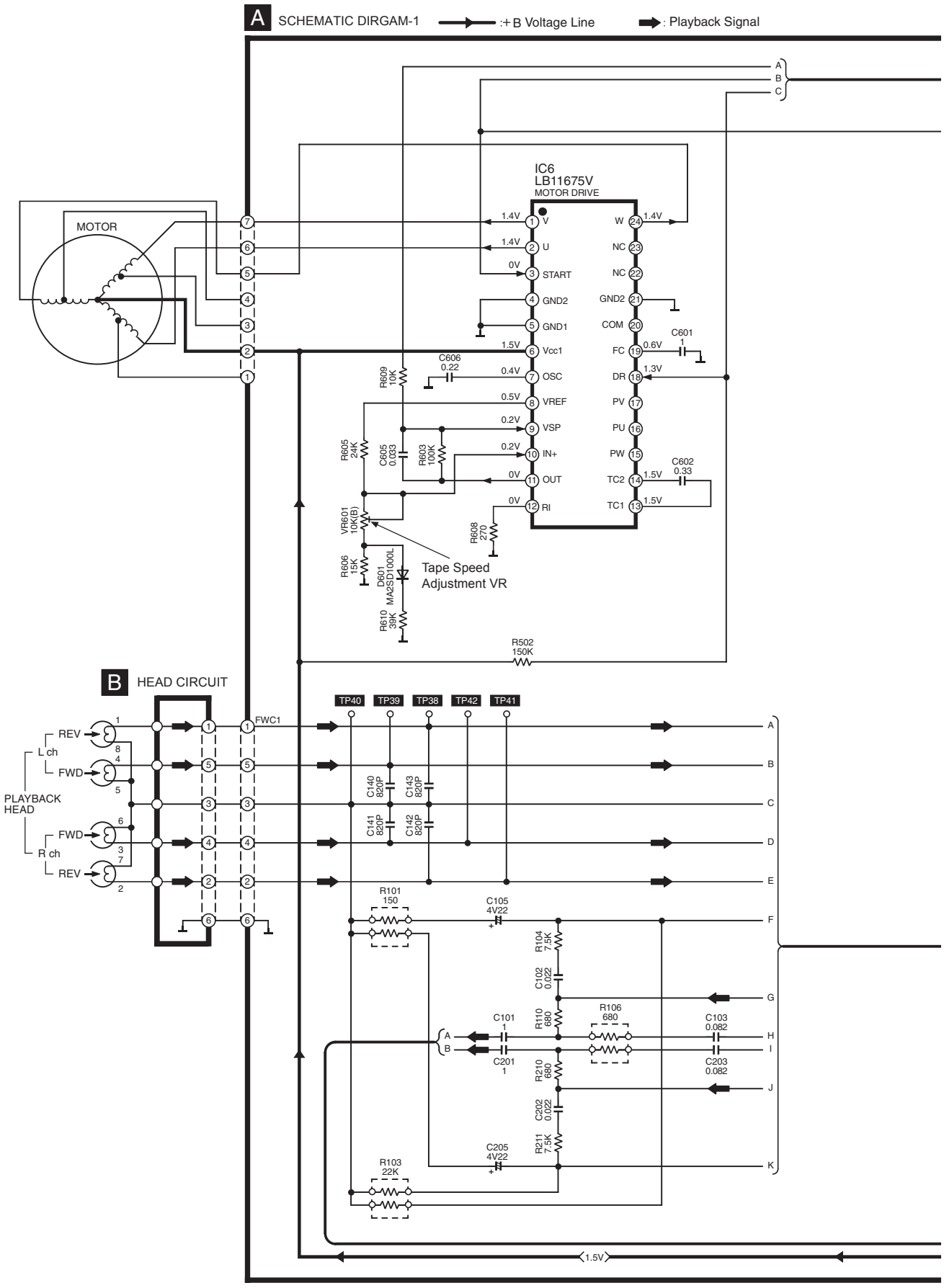
- Signal line
  ➡ : Positive voltage line
  ➡ : Playback signal line

- **This schematic diagram may be modified at any time with development of new technology.**

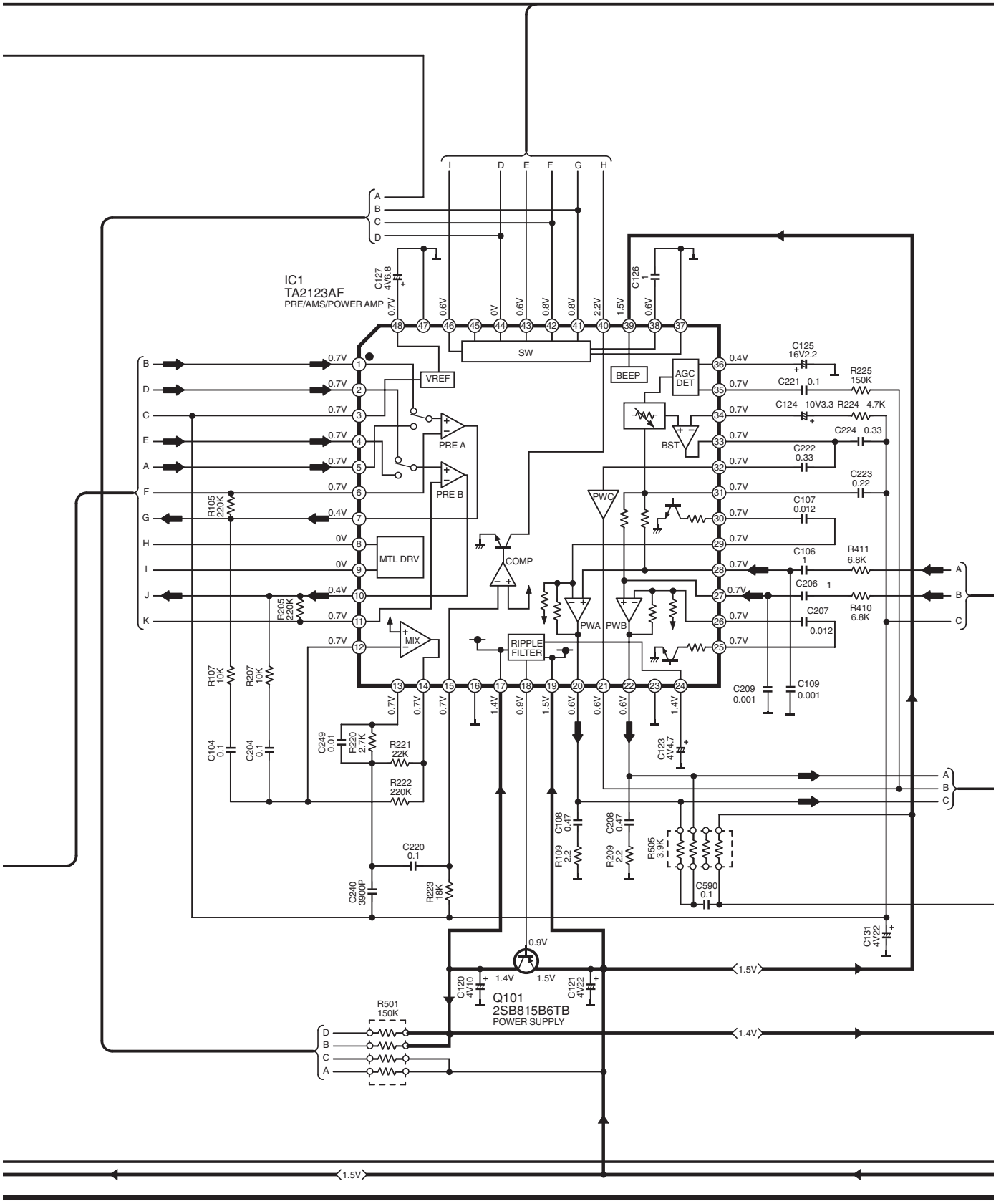
6. Schematic Diagram

7. Printed Circuit Board Diagram

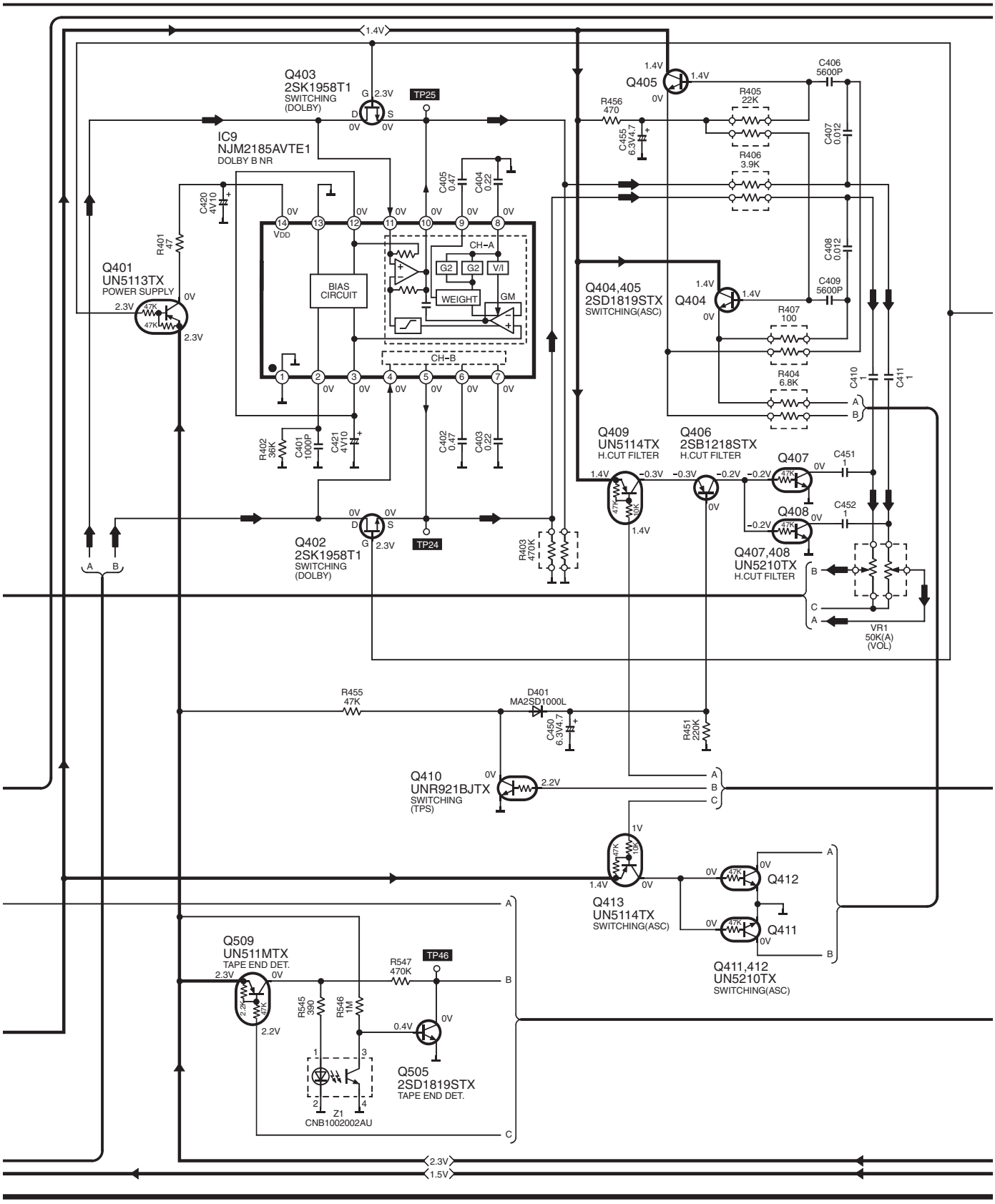
8. Type Illustration of ICs, Transistors and Diodes

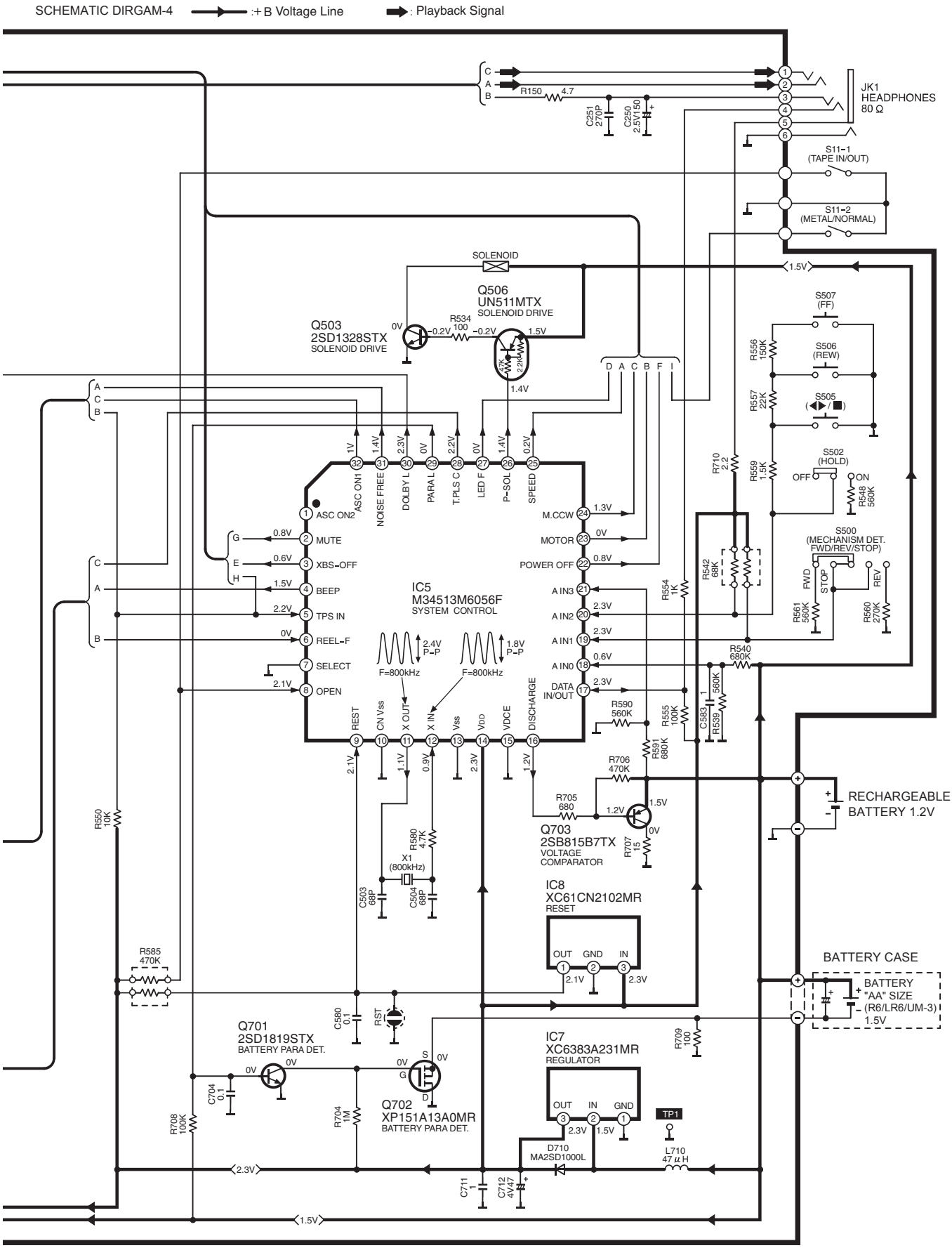

A SCHEMATIC DIRGAM-1
:+B Voltage Line
: Playback Signal
IC6
LB11675V
MOTOR DRIVE
MOTOR
V
U
START
GND2
GND1
Vcc1
OSC
VREF
VSP
IN+
OUT
RI
W
NC
NC
GND2
COM
FC
DR
PV
PU
PW
TC2
TC1
R609 10K
C606 0.22
R605 24K
C605 0.033
R603 100K
VR601 10K(B)
R606 15K
D601 MA2SD1000L
R610 39K
R608 270
C601 1
C602 0.33
Tape Speed Adjustment VR
R502 150K
B HEAD CIRCUIT
PLAYBACK HEAD
L ch
R ch
REV
FWD
FWD
REV
FWC1
TP40
TP39
TP38
TP42
TP41
C140 820P
C143 820P
C141 820P
C142 820P
R101 150
C105 4V22
R104 7.5K
C102 0.022
R106 680
C101 1
R110 680
C103 0.082
C201 1
C203 0.082
R210 680
C202 0.022
R211 7.5K
C205 4V22
R103 22K
1.5V

SCHEMATIC DIRGAM-2 :+ B Voltage Line : Playback Signal

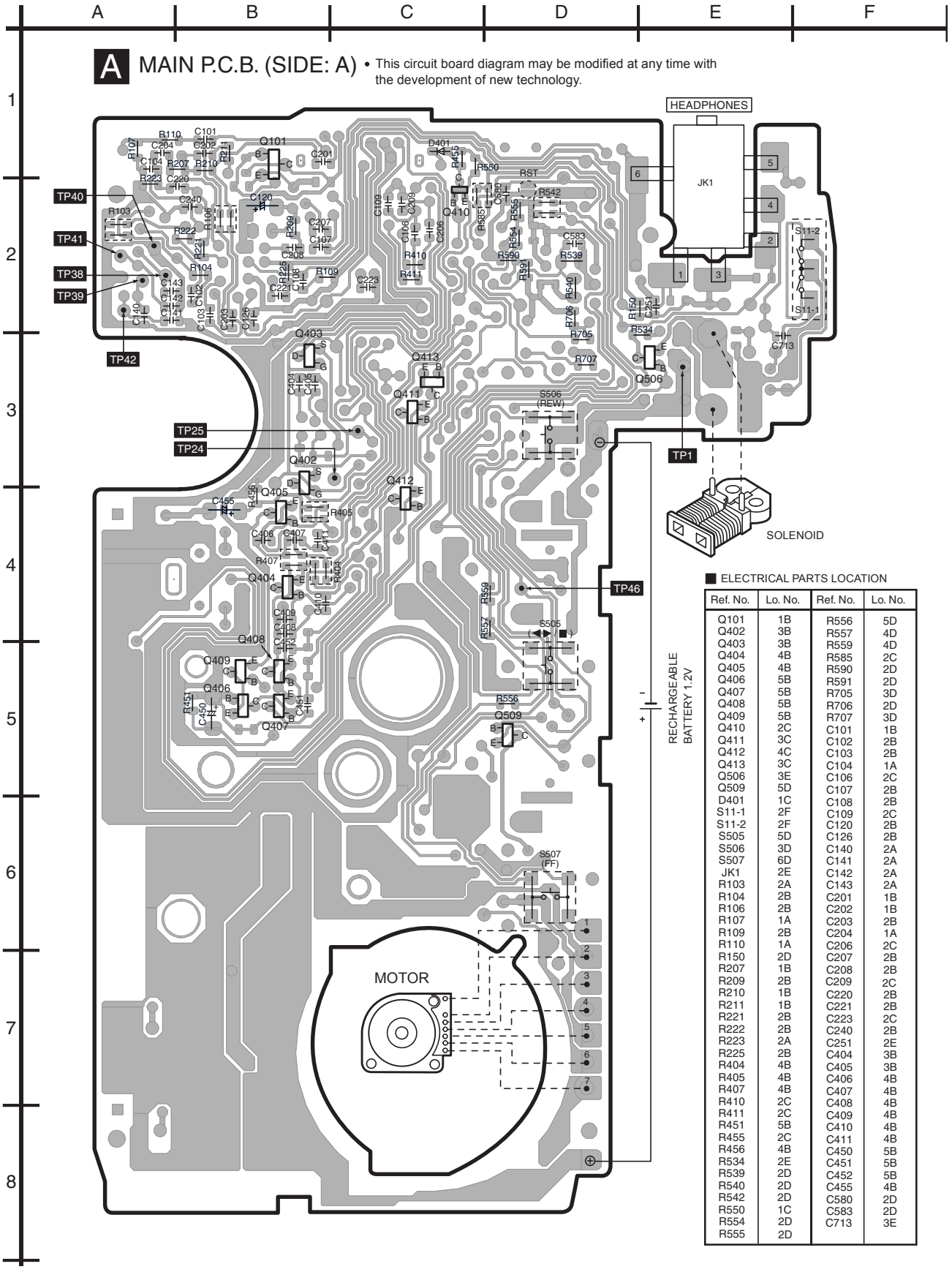


A SCHEMATIC DIRGAM-3 :+B Voltage Line : Playback Signal



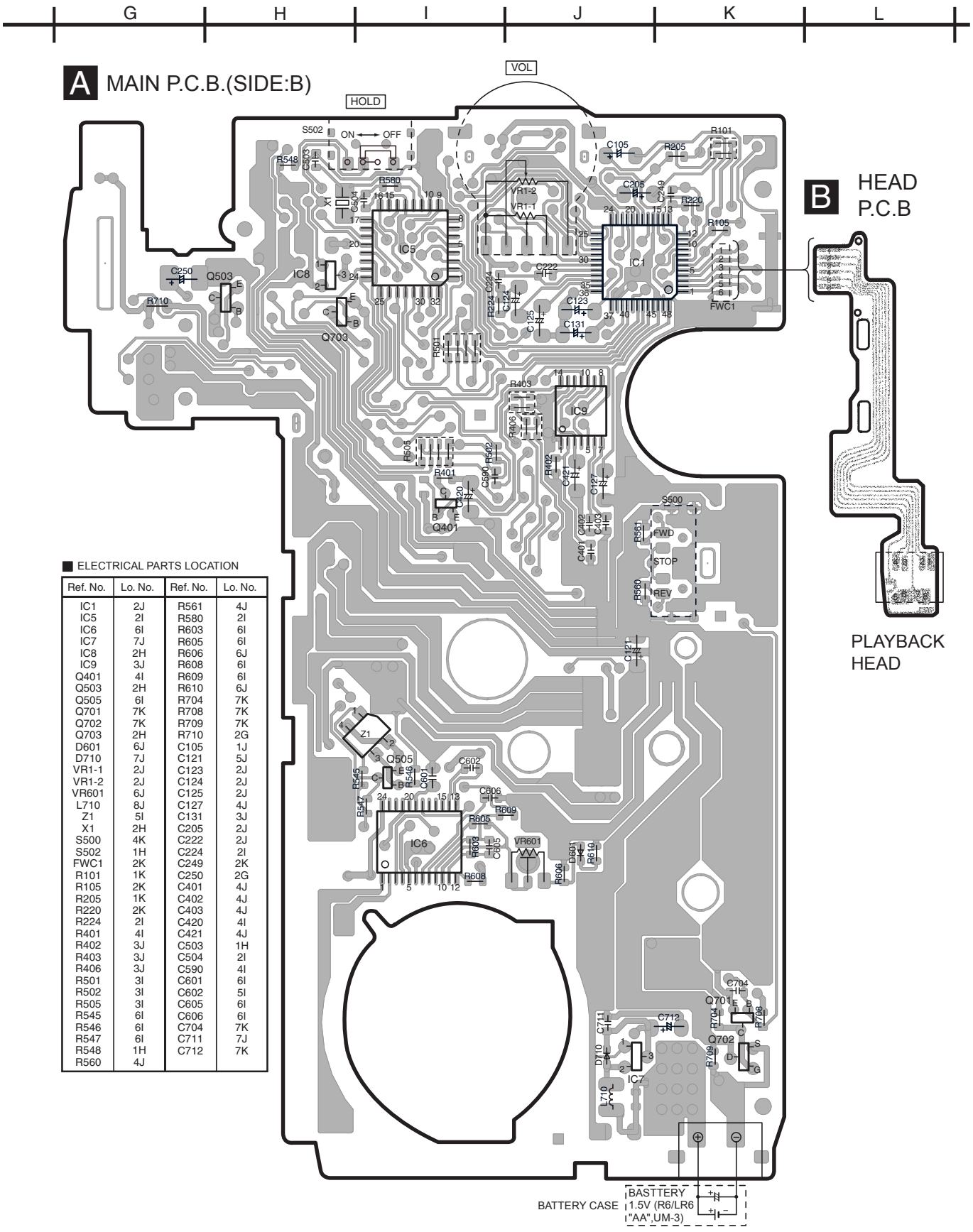

SCHEMATIC DIRGAM-4
:+ B Voltage Line
: Playback Signal
JK1
HEADPHONES
80 Ω
S11-1
(TAPE IN/OUT)
S11-2
(METAL/NORMAL)
SOLENOID
Q506
UN511MTX
SOLENOID DRIVE
Q503
2SD1328STX
SOLENOID DRIVE
S507
(FF)
S506
(REW)
S505
S502
(HOLD)
OFF
ON
S500
(MECHANISM DET.
FWD/REV/STOP)
FWD
STOP
REV
IC5
M34513M6056F
SYSTEM CONTROL
ASC ON2
MUTE
XBS-OFF
BEEP
TPS IN
REEL-F
SELECT
OPEN
ASC ON1
NOISE FREE
DOLBY L
PARA L
T.PLS C
LED F
P-SOL
SPEED
M.CCW
MOTOR
POWER OFF
A IN3
A IN2
A IN1
A IN0
DATA IN/OUT
REST
CN Vss
X OUT
X IN
Vss
VDD
VDCE
DISCHARGE
F=800kHz
2.4V P-P
1.8V P-P
X1
(800kHz)
Q703
2SB815B7TX
VOLTAGE COMPARATOR
IC8
XC61CN2102MR
RESET
OUT GND IN
IC7
XC6383A231MR
REGULATOR
OUT IN GND
Q701
2SD1819STX
BATTERY PARA DET.
Q702
XP151A13A0MR
BATTERY PARA DET.
D710
MA2SD1000L
L710
47 μH
TP1
RECHARGEABLE
BATTERY 1.2V
BATTERY CASE
BATTERY
"AA" SIZE
(R6/LR6/UM-3)
1.5V
2.3V
1.5V

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



■ ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.
Q101	1B	R556	5D
Q402	3B	R557	4D
Q403	3B	R559	4D
Q404	4B	R585	2C
Q405	4B	R590	2D
Q406	5B	R591	2D
Q407	5B	R705	3D
Q408	5B	R706	2D
Q409	5B	R707	3D
Q410	2C	C101	1B
Q411	3C	C102	2B
Q412	4C	C103	2B
Q413	3C	C104	1A
Q506	3E	C106	2C
Q509	5D	C107	2B
D401	1C	C108	2B
S11-1	2F	C109	2C
S11-2	2F	C120	2B
S505	5D	C126	2B
S506	3D	C140	2A
S507	6D	C141	2A
JK1	2E	C142	2A
R103	2A	C143	2A
R104	2B	C201	1B
R106	2B	C202	1B
R107	1A	C203	2B
R109	2B	C204	1A
R110	1A	C206	2C
R150	2D	C207	2B
R207	1B	C208	2B
R209	2B	C209	2C
R210	1B	C220	2B
R211	1B	C221	2B
R221	2B	C223	2C
R222	2B	C240	2B
R223	2A	C251	2E
R225	2B	C404	3B
R404	4B	C405	3B
R405	4B	C406	4B
R407	4B	C407	4B
R410	2C	C408	4B
R411	2C	C409	4B
R451	5B	C410	4B
R455	2C	C411	4B
R456	4B	C450	5B
R534	2E	C451	5B
R539	2D	C452	5B
R540	2D	C455	4B
R542	2D	C580	2D
R550	1C	C583	2D
R554	2D	C713	3E
R555	2D		

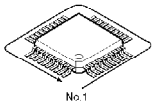


■ ELECTRICAL PARTS LOCATION

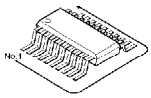
Ref. No.	Lo. No.	Ref. No.	Lo. No.
IC1	2J	R561	4J
IC5	2I	R580	2I
IC6	6I	R603	6I
IC7	7J	R605	6I
IC8	2H	R606	6J
IC9	3J	R608	6I
Q401	4I	R609	6I
Q503	2H	R610	6J
Q505	6I	R704	7K
Q701	7K	R708	7K
Q702	7K	R709	7K
Q703	2H	R710	2G
D601	6J	C105	1J
D710	7J	C121	5J
VR1-1	2J	C123	2J
VR1-2	2J	C124	2J
VR601	6J	C125	2J
L710	8J	C127	4J
Z1	5I	C131	3J
X1	2H	C205	2J
S500	4K	C222	2J
S502	1H	C224	2I
FWC1	2K	C249	2K
R101	1K	C250	2G
R105	2K	C401	4J
R205	1K	C402	4J
R220	2K	C403	4J
R224	2I	C420	4I
R401	4I	C421	4J
R402	3J	C503	1H
R403	3J	C504	2I
R406	3J	C590	4I
R501	3I	C601	6I
R502	3I	C602	5I
R505	3I	C605	6I
R545	6I	C606	6I
R546	6I	C704	7K
R547	6I	C711	7J
R548	1H	C712	7K
R560	4J		

■ Type Illustration of IC's, Transistors and Diodes

M34513M6056F	32PIN
TA2123AF	48PIN

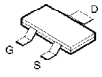


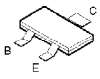
LB11675V	24PIN
NJM2185AVTE1	14PIN



XC61CN2102MR
XC6383A231MR

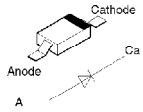
2SK1958T1
XP151A13A0MR





2SB1218STX UN511MTX
2SB815B7TX UN5113TX
2SB815B6TB UN5114TX
2SD1328STX UN5210TX
2SD1819STX
UNR921BJTX

MA2SD1000L



■ Measurements and Adjustments

• Adjustment Instructions

READ CAREFULLY BEFORE ATTEMPTING ADJUSTMENTS	
1. Set volume control to maximum. 2. Set Dolby NR switch to OFF.	3. Release the hold state. 4. Set power source voltage to 1.25V ~ 1.35V DC.

• Control Positions and Equipment Used

1. Frequency counter

• Tape Section

ITEM	TEST TAPE	MEASUREMENT POINT	ADJUSTMENT POINT	PROCEDURE
Tape speed adjustment	QZZCWAT (3 kHz, -10 dB)	Connect the frequency counter to headphones jack (80 Ω) (Refer to Fig.1)	VR601 (Refer to Fig.2)	Playback the central part of the tape and adjust VR601 so that the tape speed is as follow. Forward: 3015 ± 15 Hz Reverse: 2975 ~ 3055 Hz Make sure that the frequency range in within ± 60 Hz for between "Forward" and "Reverse" mode.

Note: The Playback head is supplied on the head arm assembly. (See the Mechanism parts Location)
The assembly requires no adjustment.

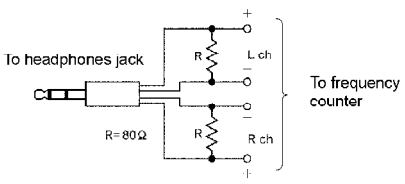


Fig. 1

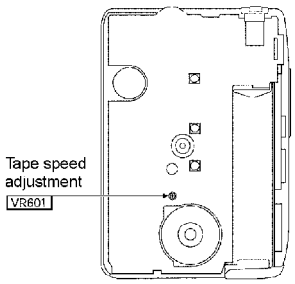


Fig. 2

9. Terminal Function of ICs

•IC5 (M34513M6056F):Mechanism Control

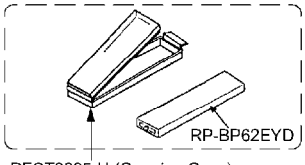
Pin No.	Terminal Name	I/O	Function
1	ASC ON2	O	ASC EQ. Control signal output
2	MUTE	O	Muting signal output
3	XBS-OFF	O	S-XBS control signal output
4	BEEP	O	Beep signal output
5	TPS IN	I	TPS control signal input
6	REEL-F	I	FWD reel pulse input
7	SELECT	I	Remote controller type select signal input
8	OPEN	I	Cassette tape insssert signal input (L=tape is inserted, H=Tape is not inserted)
9	REST	I	Reset signal input
10	CN Vss	–	GND
11	X OUT	O	Crystal OSC terminal (800kHz)
12	X IN	I	Crystal OSC terminal (800kHz)
13	Vss	–	GND
14	VDD	I	Power supply
15	VDCE	–	GND
16	DISCHARGE	O	Battery condition detect signal output
17	DATA IN/OUT	I/O	Remote controller serial data input/output
18	A IN0	I	No used, connected to VDD
19	A IN1	I	FWD/REV detect signal input
20	A IN2	I	Operation switch signal input
21	A IN3	I	BATT CHECK signal input
22	POWER OFF	O	Power control signal output
23	MOTOR	O	Motor drive signal output
24	M.CCW	O	Motor control signal output
25	SPEED	O	Motor speed control signal output
26	P-SOL	O	Solenoid drive signal output
27	LED R	O	Head switching signal output
28	T.PLS C	O	Power control signal output (for photocoupler)
29	PARAL	–	Power control signal output
30	DOLBY L	O	DOLBY ON signal output
31	NOISE FREE	O	Sound SEL control signal output
32	ASC ON1	O	ASC EQ. control signal output

■ Supply of Rechargeable Battery as Replacement Parts

Please take note of the following points relating to Carrying Case to be used for protection of Rechargeable Battery from shorting.
Replacement Parts:

- Rechargeable Battery (RP-BP62EYDST) to be supplied will be provided with Carrying Case (RFCT0005-H)
- No replacement parts will be supplied for Rechargeable Battery without Carrying Case.
- Replacement parts will be supplied for Carrying Case (RFCT0005-H) without Rechargeable Battery.
- To your customers, delivery Rechargeable Battery together with Carrying Case to prevent shorting accidents that may occur when Rechargeable Battery is carried about without Carrying Case.

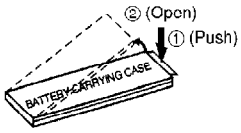
RP-BP62EYDST
(Rechargeable Battery with Carrying Case)



RFCT0005-H (Carrying Case)

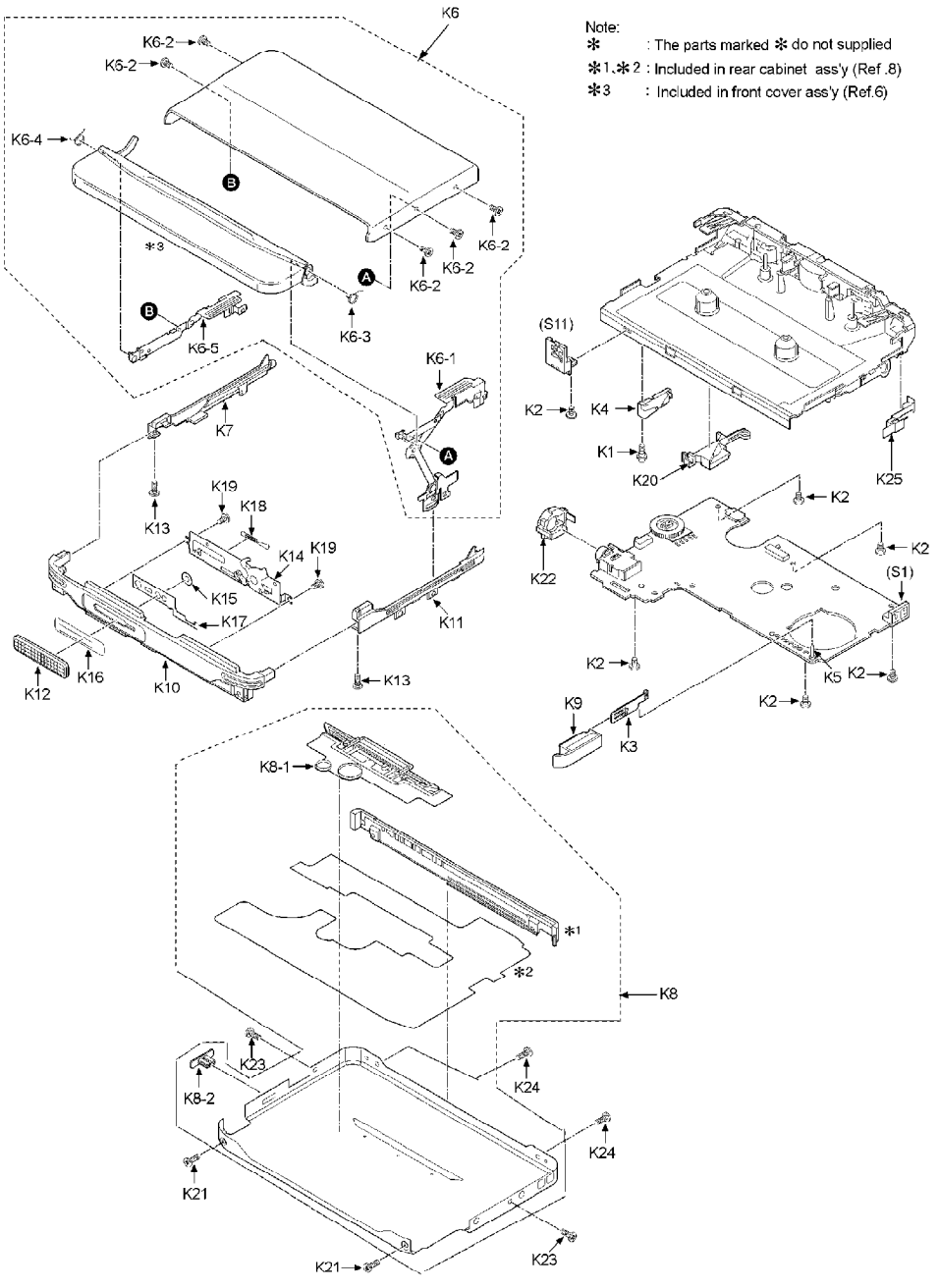
■ Caution in Use of Rechargeable Battery

Take Rechargeable Battery out of Carrying Case and use iy.
Be sure to carry Rechargeable Battery in this Carrying Case.
If not, may either head or ignite by shorting with a metal.



10. Cabinet Parts Location

■ Cabinet Parts Location

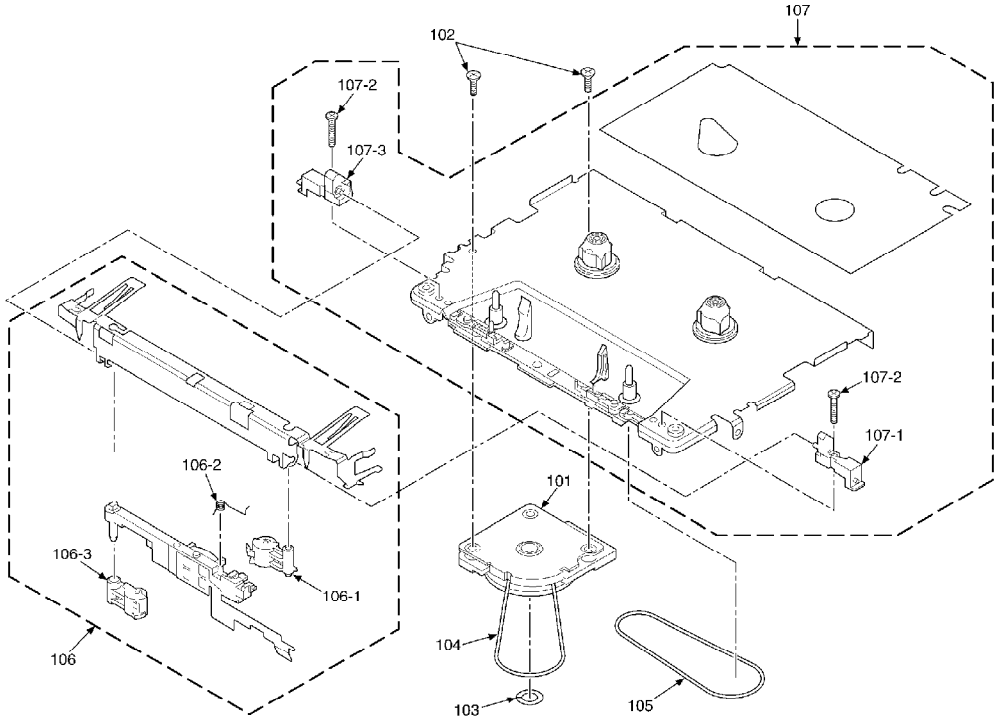


11. Mechanism Parts Location

■ Mechanism Parts Location

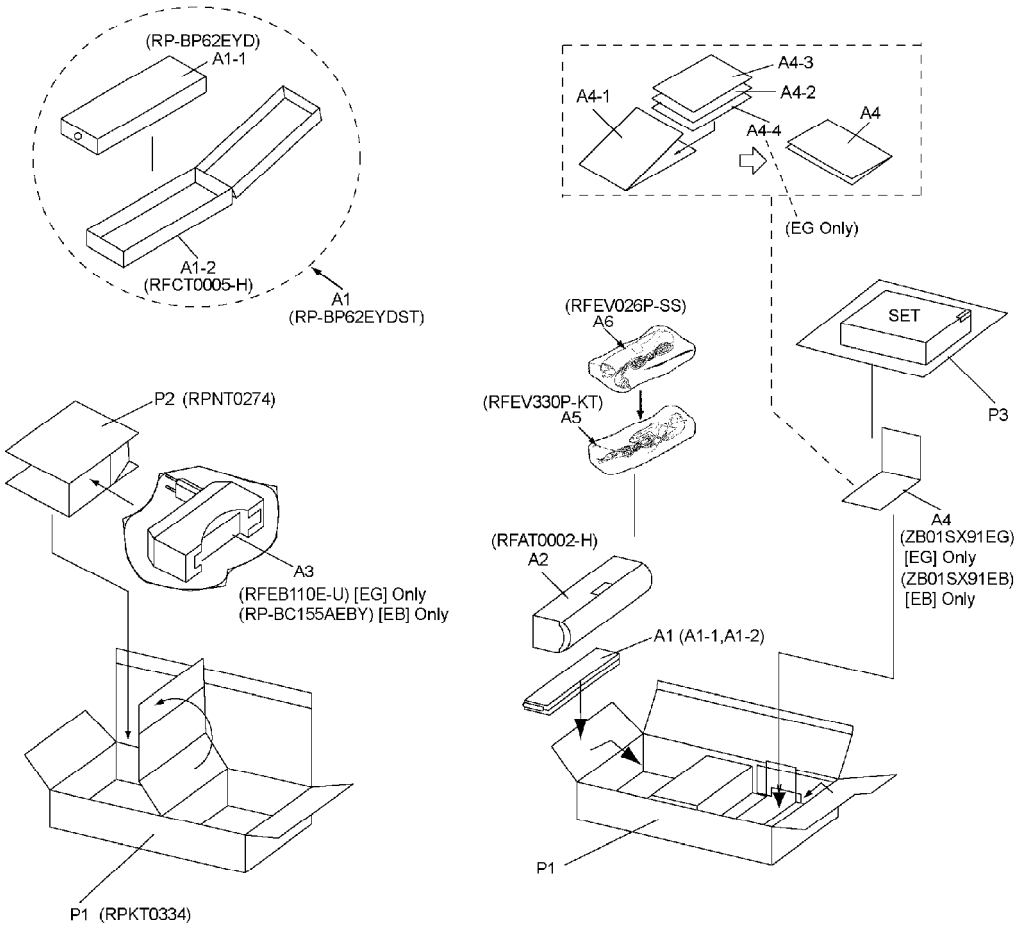
Wow and flutter	0.3 % (WRMS)
Pressure of pinch roller	110 ± 10g
Take-up tension	More than 60 g
Playback torque	20 ± 5 g
FF/REW torque	More than 60 g

The parts enclosed in the dotted boxes are supplied as a block assembly.
Therefore, they are not supplied separately except parts indicated with Ref No.



12. Packaging

■ Packaging



13. Replacement Parts List

Notes:

- 1.(T) Indicates parts that are supplied TAMACO

2.(M) Indicates parts that are supplied MESA

3.The reference number SA represent the grease tool used for unit.

Ref. No.	Part No.	Part Name & Description	Remarks
MECHANISM PARTS			
101	BFL26NB1CT	MOTOR	(T)
102	XQS14+A2FZ	SCREW	(T)
103	RHW40002	WASH	(T)
104	RDV0037	CAPSTAN BELT(1)	(T)
105	RDV0038	CAPSTAN BELT(2)	(T)
106	RXQ0636	HEAD BLOCK ASS'Y	(T)
106-1	RXL0130	PINCH ROLLER ARM(F)	(T)
106-2	RME0187-1	SPRING	(T)
106-3	RXL0131	PINCH ROLLER ARM(R)	(T)
107	RFKRQSX71	MECHANISM BLOCK	(T)
107-1	RMQ0547-1	HOLD PIESE(F)	(T)
107-2	RHD14047	SCREW	(T)
107-3	RMQ0548-1	HOLD PIESE(R)	(T)
CABINET PARTS			
K1	RHQ0013-1	SCREW	(T)
K2	RHQ0060-N	SCREW	(T)
K3	RJC99027	CHARGE TERMINAL (+)	(T)
K4	RJC99028-1	CHARGE TERMINAL (-)	(T)
K5	RJR0154-2	BATTERY SHAFT	(T)
K6	ZA1SX91EG-S	CASSETTE ASSEMBLY (Silver)	(T)
K6	ZA1SX91EG-A	CASSETTE ASSEMBLY (Blue)	(T)
K6-1	RXMT0003	LINK UNIT	(T)
K6-2	RHQ0062-S	SCREW	(T)
K6-3	RMBT0022	OPEN SPRING (L)	(T)
K6-4	RMBT0023	OPEN SPRING (R)	(T)
K6-5	RXAT0001	LINK ANGLE (R) UNIT ASS'Y	(T)
K7	RGKT0032B-S	MIDDLE ORNAMENT (A)	(T)
K8	ZA3SX91-S	REAR CABINET ASSEMBLY (Silver)	(T)
K8	ZA3SX91-A	REAR CABINET ASSEMBLY (Blue)	(T)
K8-1	RGUT0090-S	DECK BUTTON	(T)
K8-2	RGV0180-1H1	HOLD KNOB	(T)
K9	RKKT0019-S	BATTERY COVER (Silver)	(T)
K9	RKKT0019-A	BATTERY COVER (Blue)	(T)
K10	RGKT0029B-S	MIDDLE ORNAMENT (B)	(T)
K11	RGKT0030B-S	MIDDLE ORNAMENT (C)	(T)
K12	RGVT0039-S	OPEN KNOB	(T)
K13	XQN14+BG4FZ	SCREW	(T)
K14	RXQT0002	SHELL LOCK UNIT	(T)
K15	RHWT0002	WASHER	(T)
K16	RMQT0057-1	OPEN KNOB SHEET	(T)
K17	RMA0890-1	LEVER	(T)
K18	RMBT0020-1	RETURN SPRING	(T)
K19	RHE5119YA	SCREW	(T)
K20	RMRT0041	DUST PROOF COVER (R)	(T)
K21	RHQT0004-S	SCREW	(T)
K22	RMRT0039-S	JACK PIECE	(T)
K23	RHD14057-S	SCREW	(T)
K24	RHDT14026-S	SCREW	(T)
K25	RMRT0040	DUST PROOF COVER (L)	(T)
ACCESSORIES			
A1	RP-BP62EYDST	RECHARGEABLE BATTERY ASS'Y	(T)
A1-1	RP-BP62EYD	RECHARGEABLE BATTERY	(T)
A1-2	RFCT0005-H	BATT CASE	(T)

Ref. No.	Part No.	Part Name & Description	Remarks
A2	RFAT0002-H	BATTERY CASE (NO.3)	(T)
A3[EG]	RFEB110E-U	NI-CD BATTERY CHARGER ⚠	(T)
A3[EB]	RP-BC155AEBY	NI-CD BATTERY CHARGER ⚠	(T)
A4[EG]	ZB01SX91EG	PRINTING PREPARED ASS'Y	(T)
A4[EB]	ZB01SX91EB	PRINTING PREPARED ASS'Y	(T)
A4-1	RQTT0349-E	INSTRUCTION BOOK	(T)
A4-2	RQA0117	WARRANTY CARD	(T)
A4-3	RQCB0170	SERVICE DIRECTORY	(T)
A4-4 [EG]	RQCST0001	CAUTION SHEET	(T)
A5	RFEV330P-KT	INNERPHONE	(T)
A6	RFEV026P-SS	REMOTE CONT. UNIT	(T)
PACKING MATERIALS			
P1	RPKT0334	DECORATION BOX	(T)
P2	RPNT0275	PAD(FIXTURE)	(T)
P3	RPFT0015	(SET BAG)(FINISH)	(T)
SA1	QZZCWAT	TEST TAPE (Tape Speed etc)	(M)
SA2	QZZCFM	TEST TAPE (AZIMUTH/FREQ)	(M)
MEC1	RAA3713-T	DECK MECHANISM	(T)
PCB1	AAPBSX91EG	P.C.B ASS'Y	(T)
INTEGRATED CIRCUITS TRANSISTORS AND DIODES			
IC1	TA2123AF	I.C. (D48P) PRE+POWER	(T)
IC5	M34513M6056F	I.C (U-COM)	(T)
IC6	LB11675V	I.C(D24P)MOTOR CONTROL	(T)
IC7	XC6383A231MR	IC (3P)	(T)
IC8	XC61CN2102MR	RESET IC(3P)	(T)
IC9	NJM2185AVTE1	I.C (D14P) DOLBY	(T)
Q101	2SB815B6TB	TRANSISTOR	(T)
Q401	UN5113TX	TRANSISTOR	(T)
Q402	2SK1958T1	TRANSISTOR	(T)
Q403	2SK1958T1	TRANSISTOR	(T)
Q404	2SD1819ASTX	TRANSISTOR	(T)
Q405	2SD1819ASTX	TRANSISTOR	(T)
Q406	2SB1218STX	TRANSISTOR	(T)
Q407	UN5210TX	TRANSISTOR	(T)
Q48	UN5210TX	TRANSISTOR	(T)
Q409	UN5114TX	TRANSISTOR	(T)
Q413	UN5114TX	TRANSISTOR	(T)
Q410	UNR921BJTX	TRANSISTOR	(T)
Q411	UN5210TX	TRANSISTOR	(T)
Q412	UN5210TX	TRANSISTOR	(T)
Q503	2SD1328STX	TRANSISTOR	(T)
Q505	2SD1819ASTX	TRANSISTOR	(T)
Q701	2SD1819ASTX	TRANSISTOR	(T)
Q506	UN511MTX	TRANSISTOR	(T)
Q509	UN511MTX	TRANSISTOR	(T)
Q702	XP151A13A0MR	FET	(T)
Q703	2SB815B7TX	TRANSISTOR	(T)
D401	MA2SD1000L	DIODE	(T)
D601	MA2SD1000L	DIODE	(T)
D710	MA2SD1000L	DIODE	(T)
COILS AND TRANSFORMERS			
L710	RLQQ470KT1-D	CHIP COIL	(T)

Ref. No.	Part No.	Part Name & Description	Remarks
VARIABLE RESISTORS			
VR1	EVUTUGB15A54	VARIABLE RESISTOR(VOLUME)	(T)
VR601	EVM1CSX10B14	SEMI VARIABLE RESISTOR	(T)
COMPONENT COMINATION			
Z1	CNB1002002AU	PHOTO COUPLER	(T)
SWITCHES			
S1	RJH9208-1	BATTERY TERMINAL	(T)
S11	RSH1B011-5U	TAPE SELECT SW	(T)
S500	RSS2A010-1A	SLIDE SWITCH	(T)
S502	RSS2A012-1A	SLIDE SWITCH	(T)
S505	RSG0051-P	TACT SWITCH	(T)
S506	RSG0051-P	TACT SWITCH	(T)
S507	RSG0051-P	TACT SWITCH	(T)
JACK			
JK1	RJJ36TK03-1C	SOCKETS (H.P)	(T)
FPC CONNECTOR			
FWC1	RJS2A1606T1	FPC CONNECTOR	(T)
CRYSTAL			
X1	RSXZ800KF01T	QUARTZ CRYSTAL OSCILLATOR	(T)
RESISTORS			
R101	EXBV4V151JV	CHIP RESISTOR	(M)
R103	EXBV4V223JV	CHIP RESISTOR	(M)
R405	EXBV4V223JV	CHIP RESISTOR	(M)
R104	ERJ3GEYJ752V	CHIP RESISTOR	(M)
R211	ERJ3GEYJ752V	CHIP RESISTOR	(M)
R105	ERJ3GEYJ224V	CHIP RESISTOR	(M)
R205	ERJ3GEYJ224V	CHIP RESISTOR	(M)
R106	EXBV4V681JV	CHIP RESISTOR	(M)
R107	ERJ3GEYJ103V	CHIP RESISTOR	(M)
R207	ERJ3GEYJ103V	CHIP RESISTOR	(M)
R109	ERJ3GEYJ2R2V	CHIP RESISTOR	(M)
R209	ERJ3GEYJ2R2V	CHIP RESISTOR	(M)
R110	ERJ3GEYJ681V	CHIP RESISTOR	(M)
R210	ERJ3GEYJ681V	CHIP RESISTOR	(M)
R705	ERJ3GEYJ681V	CHIP RESISTOR	(M)
R150	ERJ3GEYJ4R7V	CHIP RESISTOR	(M)
R220	ERJ3GEYJ272V	CHIP RESISTOR	(M)
R221	ERJ3GEYJ223V	CHIP RESISTOR	(M)
R222	ERJ3GEYJ224V	CHIP RESISTOR	(M)
R451	ERJ3GEYJ224V	CHIP RESISTOR	(M)
R223	ERJ3GEYJ183V	CHIP RESISTOR	(M)
R224	ERJ3GEYJ472V	CHIP RESISTOR	(M)
R580	ERJ3GEYJ472V	CHIP RESISTOR	(M)
R225	ERJ3GEYJ154V	CHIP RESISTOR	(M)
R556	ERJ3GEYJ154V	CHIP RESISTOR	(M)
R401	ERJ3GEYJ470V	CHIP RESISTOR	(M)
R402	ERJ3GEYD363V	CHIP RESISTOR	(M)
R403	EXBV4V474JV	CHIP RESISTOR	(M)
R404	EXBV4V682JV	CHIP RESISTOR	(M)
R406	EXBV4V392JV	CHIP RESISTOR	(M)
R407	EXBV4V101JV	CHIP RESISTOR	(M)
R410	ERJ3GEYJ562V	CHIP RESISTOR	(M)
R411	ERJ3GEYJ562V	CHIP RESISTOR	(M)
R455	ERJ3GEYJ473V	CHIP RESISTOR	(M)

Ref. No.	Part No.	Part Name & Description	Remarks
R456	ERJ3GEYJ471V	CHIP RESISTOR	(M)
R501	EXBV8V154JV	CHIP RESISTOR	(M)
R502	ERJ3GEYJ154V	CHIP RESISTOR	(M)
R505	EXBV8V392JV	CHIP RESISTOR	(M)
R534	ERJ3GEYJ101V	CHIP RESISTOR	(M)
R539	ERJ6GEYD564V	CHIP RESISTOR	(M)
R540	ERJ6GEYD684V	CHIP RESISTOR	(M)
R542	EXBV4V683JV	CHIP RESISTOR	(M)
R545	ERJ3GEYJ391V	CHIP RESISTOR	(M)
R546	ERJ3GEYJ105V	CHIP RESISTOR	(M)
R704	ERJ3GEYJ105V	CHIP RESISTOR	(M)
R547	ERJ3GEYJ474V	CHIP RESISTOR	(M)
R548	ERJ3GEYJ564V	CHIP RESISTOR	(M)
R561	ERJ3GEYJ564V	CHIP RESISTOR	(M)
R550	ERJ3GEYJ103V	CHIP RESISTOR	(M)
R554	ERJ3GEYJ102V	CHIP RESISTOR	(M)
R555	ERJ3GEYJ104V	CHIP RESISTOR	(M)
R557	ERJ3GEYJ223V	CHIP RESISTOR	(M)
R559	ERJ3GEYJ152V	CHIP RESISTOR	(M)
R560	ERJ3GEYJ274V	CHIP RESISTOR	(M)
R585	EXBV4V474JV	CHIP RESISTOR	(M)
R590	ERJ3GEYJ564V	CHIP RESISTOR	(M)
R591	ERJ3GEYJ684V	CHIP RESISTOR	(M)
R603	ERJ3GEYJ104V	CHIP RESISTOR	(M)
R708	ERJ3GEYJ104V	CHIP RESISTOR	(M)
R605	ERJ3GEYJ273V	CHIP RESISTOR	(M)
R606	ERJ3GEYJ153V	CHIP RESISTOR	(M)
R608	ERJ3GEYJ271V	CHIP RESISTOR	(M)
R609	ERJ3GEYJ103V	CHIP RESISTOR	(M)
R610	ERJ3GEYJ393V	CHIP RESISTOR	(M)
R706	ERJ3GEYJ474V	CHIP RESISTOR	(M)
R707	ERJ3GEYJ150V	CHIP RESISTOR	(M)
R709	ERJ3GEYJ101V	CHIP RESISTOR	(M)
R710	ERJ6GEYJ2R2V	CHIP RESISTOR	(M)
CAPACITORS			
C101	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C106	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C126	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C201	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C206	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C410	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C411	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C451	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C452	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C583	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C102	ECUV1C223KBV	CHIP CAPACITOR	(M)
C202	ECUV1C223KBV	CHIP CAPACITOR	(M)
C103	ECUV1C823KBV	CHIP CAPACITOR	(M)
C203	ECUV1C823KBV	CHIP CAPACITOR	(M)
C104	ECUVNC104KBV	CHIP CAPACITOR	(M)
C204	ECUVNC104KBV	CHIP CAPACITOR	(M)
C220	ECUVNC104KBV	CHIP CAPACITOR	(M)
C105	ECST0GY226R	TANTALUM CAP.	(M)
C107	ECUV1C123KBV	CHIP CAPACITOR	(M)

Ref. No.	Part No.	Part Name & Description	Remarks
C207	ECUV1C123KBV	CHIP CAPACITOR	(M)
C407	ECUV1C123KBV	CHIP CAPACITOR	(M)
C408	ECUV1C123KBV	ECUV1C123KBV	(M)
C108	ECUV1C474ZFV	CHIP CAPACITOR	(M)
C109	ECUV1H102KBV	CHIP CAPACITOR	(M)
C209	ECUV1H102KBV	CHIP CAPACITOR	(M)
C120	RCST0GA106RG	TANTALUM CAP.	(M)
C121	ECST0GY226R	TANTALUM CAP.	(M)
C123	ECST0GY475R	TANTALUM CAP.	(M)
C124	ECST1AY335R	TANTALUM CAP.	(M)
C125	ECST1CY225R	TANTALUM CAP.	(M)
C127	ECST0GY685R	TANTALUM CAP.	(M)
C131	ECST0GY226R	TANTALUM CAP.	(M)
C140	ECUV1H821KBV	CHIP CAPACITOR	(M)
C141	ECUV1H821KBV	CHIP CAPACITOR	(M)
C142	ECUV1H821KBV	CHIP CAPACITOR	(M)
C143	ECUV1H821KBV	CHIP CAPACITOR	(M)
C205	ECST0GY226R	TANTALUM CAP.	(M)
C208	ECUV1C474ZFV	CHIP CAPACITOR	(M)
C221	ECUVNC104ZFV	CHIP CAPACITOR	(M)
C580	ECUVNC104ZFV	CHIP CAPACITOR	(M)
C222	ECUVNC334ZFV	CHIP CAPACITOR	(M)
C224	ECUVNC334ZFV	CHIP CAPACITOR	(M)
C223	ECUVNA224KBV	CHIP CAPACITOR	(M)
C404	ECUVNA224KBV	CHIP CAPACITOR	(M)
C240	ECUV1H392KBV	CHIP CAPACITOR	(M)
C249	ECUV1E103KBV	CHIP CAPACITOR	(M)
C250	RCST0EX157RG	TANTALUM CAP.	(M)
C251	ECUV1H271KBV	CHIP CAPACITOR	(M)
C401	ECUV1H102KBV	CHIP CAPACITOR	(M)
C402	ECUV0J474KBV	CHIP CAPACITOR	(M)
C403	ECUVNA224KBV	CHIP CAPACITOR	(M)
C606	ECUVNA224KBV	CHIP CAPACITOR	(M)
C405	ECUV0J474KBV	CHIP CAPACITOR	(M)
C406	ECUVNH562KBV	CHIP CAPACITOR	(M)
C409	ECUVNH562KBV	CHIP CAPACITOR	(M)
C420	ECST0GY106R	TANTALUM CAP.	(M)
C421	ECST0GY106R	TANTALUM CAP.	(M)
C450	ECST0JP475R	TANTALUM CAP.	(M)
C455	ECST0JP475R	TANTALUM CAP.	(M)
C503	ECUV1H680JCV	CHIP CAPACITOR	(M)
C504	ECUV1H680JCV	CHIP CAPACITOR	(M)
C590	ECUVNC104ZFV	CHIP CAPACITOR	(M)
C601	ECUVNA105KBN	CHIP CAPACITOR	(M)
C602	ECUVNA334KBV	CHIP CAPACITOR	(M)
C605	ECUVNC333KBV	CHIP CAPACITOR	(M)
C704	ECUVNC104ZFV	CHIP CAPACITOR	(M)
C711	ECUVNA105ZFV	CHIP CAPACITOR	(M)
C712	RCST0GY476RG	TANTALUM CAP.	(M)
C713	ECUV1H680JCV	CHIP CAPACITOR	(M)

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